

WHAT IS CLAIMED IS:

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1. A process for post treatment of an ultrasonically welded seamed flexible imaging member belt comprising

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providing an elongated support member having a smooth flat supporting surface,

9 providing a flexible belt having parallel edges and a welded seam extending from one edge to the other edge, the belt seam comprising a seam region comprising an overlap and two adjacent splashings, thermoplastic polymer material having a glass transition temperature and an inner and outer surface,

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supporting the inner surface of seam on the smooth flat supporting surface with the seam region of the belt held down against and conforming to the flat supporting surface of the support member,

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contacting the seam with a heated surface, the contacting heated surface has a profile that is substantially parallel to the smooth flat supporting surface of the support member,

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heating the seam with the heated surface to raise the temperature in the seam region to a temperature of from about 2°C to 20°C above the Tg of the thermoplastic polymer material, and

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compressing the seam with the heated surface with sufficient compression pressure to smooth out the seam.

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2. A process according to claim 1 wherein the heated surface comprises a narrow heating strip having a width of between about 6 millimeters and about 25.4 millimeters, the seam being substantially centered under the strip during contact of the heated surface with the seam.

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3. A process according to claim 2 wherein a rotatable compression wheel progressively presses the heating strip against the seam from one edge of the belt to the other edge, the rotatable compression wheel having a circumferential surface that contacts the strip to create a straight line compression against seam, the surface having a flat appearance when a profile of the circumferential surface is viewed in a direction perpendicular to an imaginary axis of the wheel.

4. A process according to claim 3 wherein the rotatable compression wheel progressively presses the heating strip against the seam from one edge of the belt to the other edge with a uniform linear compression pressure.

5. A process according to claim 1 wherein the heated surface comprises a surface of a compression heating bar, the heated surface contacting and compressing the entire seam region from one edge of the belt to the other edge.

6. A process according to claim 5 wherein the compression heating bar exerts an uniform compression pressure of between about 10 kilograms/cm² and about 100 kilograms/cm² on contact with the seam region.

7. A process according to claim 1 wherein the heated surface comprises a peripheral surface of a rotatable compression wheel, the heated surface progressively contacting and compressing the seam region to create a linear compression pressure perpendicular to the seam and traversing the belt from one edge to the other edge.

8. A process according to claim 6 wherein the heated rotatable compression wheel exerts a uniform linear compression contacting pressure of between about 1lb/in (0.18 kilograms/cm) and 10lbs/in (1.8 kilograms/cm) against the seam region.

9. A process according to claim 1 wherein the heated surface comprises a low surface energy adhesive material.

10. Apparatus comprising

3 a support member having a flat surface adapted to receive and support a seam region of a
flexible belt comprising thermoplastic polymer material having a predetermined glass
transition temperature,

6 a heatable member having a smooth surface for compressing at least a portion of the
seam region of a flexible belt placed on the smooth flat surface of the support member to
9 heat the portion to at least the glass transition temperature of the thermoplastic polymer
material, the smooth surface of the heatable member having a profile which is parallel to
the smooth flat surface of the support member.

11. Apparatus according to claim 10 wherein the heatable member is a strip
aligned for centering over the seam.

12. Apparatus according to claim 11 wherein a rotatable compression wheel
contacts the strip to compress the strip against the seam.

13. Apparatus according to claim 9 wherein the heatable member is a compression
heating bar having a smooth heatable flat surface aligned to contact and uniformly
3 compress the entire seam from one edge of the belt to the other edge.

14. Apparatus according to claim 13 wherein the smooth heatable flat surface
comprises a low surface energy or adhesive material.

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15. Apparatus according to claim 10 wherein the heatable member is a rotatable
compression wheel having a profile which is parallel to the flat surface of the support
3 member.

16. Apparatus according to claim 15 wherein the rotatable compression heating
wheel surface comprises a low surface energy or adhesive material.